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DETAILED DESCRIPTION

[Detailed Description of the Invention]

[0001]

[Field of the Invention]This invention relates to the container which consists of the cover material and this laminated film which consist of a laminated film and this laminated film.

[0002]

[Description of the Prior Art]In wrapping, generally considering it as the layered product which made the heat-sealing (sealant) layer form in a substrate is performed, and olefin system resin, such as polyethylene, polypropylene, and an ethylene system copolymer, is mainly used as a sealant material. The layered product in which these sealant layers were formed is used as a saccate container, or is used as a cover material of containers, such as cup shape, case shape, etc. which consist of a plastic, paper, etc. As soon as seal strength excels in sealing performance highly, it is required for these packages to excel in open-easiness (easy open nature) at the time of use of contents. Although a bag may be torn in the case of a saccate container and it may open, in the case of the cover material of containers, such as cup shape and case shape, a lid is removed from a package body, and is opened in many cases, and the ease (easy peel nature) of removing from a container is required for it as a cover material.

[0003]Sealant has the method of using as the resin composition which blended different-species resin as one of the main techniques which gives easy peel nature, for example, it is indicated by JP,8-48849,A etc. However, in the resin composition which blended styrene resin and olefin system resin, since both refractive indicees differed greatly, even when film state was processed, there was a problem of being inferior to transparency. When using sealant as a cover material of containers, such as a cup, there was a request where it is made for the contents of the container to look clear, but the lowness of the transparency of the sealant layer of a cover material had become an obstacle.

[0004]When the sealant material in which easy peel nature is shown was heat sealed to

adherends, such as a container, as sealant as it was, seal strength (peel strength) changed with heat-sealing conditions, such as temperature, a pressure, and time, a lot in many cases, and the stable peel strength might not be obtained. Although exfoliation was produced between a sealant material and adherend, in the field of higher peel strength, it became cohesive failure exfoliation in many cases, and there was a problem that the fine sight of an exfoliation interface was not good.

[0005]As a means to solve these problems, it is considered as the laminated film which provided a sealant layer and stratum disjunctum, The technique (interlaminar-peeling type easy peel) of a sealant layer carrying out [the technique] full weld with adherend, and carrying out interlaminar peeling by the interface of a sealant layer and stratum disjunctum is proposed, For example, the heat-sealing sealed layer which consists of polyethylene is made into the outermost layer, and the film, wherein ***** which subsequently consists of mixed material of styrene resin and ethylene resin is laminated is indicated by JP,9-124070,A. However, this method has a layer which consists of mixed material of styrene resin and ethylene resin, and is inferior to transparency.

[0006]

[Problem(s) to be Solved by the Invention]As opposed to the paper made container and the container made of propylene resin with which the container made of styrene resin, the container made of ethylene resin, and ethylene resin laminated the purpose of this invention in this situation, It is in providing the laminated film which shows easy peel nature and easy open nature, is excellent in the fine sight of an exfoliation interface, and is excellent also in transparency. The purpose of this invention is to provide the container which consists of the cover material and this laminated film which consist of the above-mentioned laminated film.

[0007]

[Means for Solving the Problem]Namely, a sealant layer in which at least one surface of this invention is 1-10 micrometers in thickness, It is a laminated film which comprises at least three layers of supporters who adjoin this sealant layer and adjoin a cohesive failure layer which is 1-10 micrometers in thickness, and this cohesive failure layer, Said sealant layer consists of a layer containing a kind of resin chosen from styrene resin, ethylene resin, and propylene resin, It is a laminated film, wherein said cohesive failure layer consists of a layer containing following olefin system resin or olefine-system-resin-composition thing (X) and said supporters consist of a layer containing the following olefin system resin or an olefine-system-resin-composition thing (Y).

Olefin system resin or olefine-system-resin-composition thing (X) : A following component (A) and a following component (B) are contained, And olefin system resin or olefine-system-resin-composition thing $K+L=100$ which satisfies following formula ** and ** Formula

** $35 \leq 0.2xK + 0.8xM \leq 55$ Formula ** (among a formula) K expresses loadings (% of the

weight) of an ingredient (A), and content (% of the weight) of a repeating unit to which L is derived from loadings (% of the weight) of an ingredient (B), and a vinyl monomer in the following ethylene system copolymer whose M is an ingredient (A), respectively.

Ingredient (A) Unsaturated carboxylic acid, unsaturated carboxylic acid ester, one kind of ethylene system copolymer or two or more kinds of mixture ingredients (B) which consist of a repeating unit derived from a vinyl monomer more than a kind chosen from an unsaturated carboxylic acid anhydride and vinyl acetate, and a repeating unit derived from ethylene.

Ethylene resin or propylene resin (however, except for an ethylene system copolymer of said ingredient (A))

Olefin system resin or an olefine-system-resin-composition thing (Y) : Ethylene resin or propylene resin. Olefin system resin which it is and contains resin used of the above-mentioned ingredient (B) and resin of the same kind at least 60% of the weight (removing [however,] an ethylene system copolymer) of above-mentioned ingredient (A) or an olefine-system-resin-composition thing, and this invention are cover materials consisting of the above-mentioned laminated film. This invention is a container consisting of the above-mentioned laminated film. Hereafter, this invention is explained in detail.

[0008]

[Embodiment of the Invention]At least one surface the laminated film of this invention 1-10 micrometers in thickness. It is a laminated film which comprises at least three layers of the supporters who adjoin the sealant layer which is 3-7 micrometers preferably, and this sealant layer, and adjoin the cohesive failure layer which is 3-7 micrometers preferably, and this cohesive failure layer 1-10 micrometers in thickness. When the thickness of a sealant layer and a cohesive failure layer is outside the range of this invention, since good easy peel nature is not shown, it is not desirable.

[0009]The sealant layer in this invention consists of a layer containing a kind of resin chosen from styrene resin, ethylene resin, and propylene resin. As styrene resin, polystyrene, rubber modified polystyrene, styrene butadiene block copolymers, and those mixtures are mentioned, for example. Also in them, 60 to 100 % of the weight of polystyrene which is the weight average molecular weight 200,000-400,000 reaches from a viewpoint of the transparency of a film, Styrene resin or the styrene resin composition containing 0 to 40 % of the weight of rubber modified polystyrene which is a diameter of an average gel particle of 0.1-5 micrometers and 5 to 30 % of the weight of the amounts of gels is preferred. As ethylene resin, ethylene system copolymers and those mixtures, such as ethylene-alpha olefin copolymers, such as polyethylene; ethylene-butene-1 copolymers, such as low density polyethylene and high density polyethylene, and ethylene-hexene-1 copolymer, are mentioned, for example. As alpha olefin of an ethylene-alpha olefin copolymer, the alpha olefin of the carbon numbers 4-10 of butene-1, the hexene- 1, 4-methylpentene- 1, the heptene- 1, the octene- 1, and decene 1

grade is mentioned, for example. As propylene resin, propylene system polymers and those mixtures, such as polypropylene, a propylene-alpha olefin block copolymer, and a propylene-alpha-olefin random copolymer, are mentioned, for example. As alpha olefin of a propylene-alpha olefin block copolymer and a propylene-alpha-olefin random copolymer, the alpha olefin of the carbon numbers 2, 4-10 of ethylene, butene-1, and octene-1 grade is mentioned, for example.

[0010]In the container which consists of styrene resin when it is considered as the sealant layer which consists of styrene resin. It can use for the container which consists of propylene resin when it is considered as the sealant layer which becomes a container which consists of ethylene resin when it is considered as the sealant layer which consists of ethylene resin, or a container which consists of paper which ethylene resin laminated from propylene resin, respectively.

[0011]The cohesive failure layer in this invention consists of a layer containing the following olefin system resin or olefine-system-resin-composition thing (X).

Olefin system resin or olefine-system-resin-composition thing (X) : A following component (A) and a following component (B) are contained, And olefin system resin or olefine-system-resin-composition thing $K+L=100$ which satisfies following formula ** and ** Formula

** $35 \leq 0.2 \times K + 0.8 \times M \leq 55$ Formula ** (among a formula) K expresses the loadings (% of the weight) of an ingredient (A), and the content (% of the weight) of a repeating unit to which L is derived from the loadings (% of the weight) of an ingredient (B), and the vinyl monomer in the following ethylene system copolymer whose M is an ingredient (A), respectively.

Ingredient (A) The repeating unit derived from the vinyl monomer more than a kind chosen from unsaturated carboxylic acid, unsaturated carboxylic acid ester, an unsaturated carboxylic acid anhydride, and vinyl acetate. The repeating unit derived from (a "vinyl monomer unit" is called hereafter) and ethylene. (An "ethylene unit" is called hereafter) from -- becoming one kind of ethylene system copolymer or two or more kinds of mixture ingredients (B) Ethylene resin or propylene resin (however, except for the ethylene system copolymer of said ingredient (A))

Here, let the value of M in the case of using two or more kinds of ethylene system copolymers in which the content of a vinyl monomer unit differs as an ingredient (A) be the weight percentage average value of each vinyl monomer unit. The content of a vinyl monomer unit the ethylene system copolymer of M_1 (% of the weight) For example, N_1 (% of the weight), The value (% of the weight) of M when the content of a vinyl monomer unit uses the mixture of N_2 (% of the weight) as an ingredient (A) for the ethylene system copolymer of M_2 (% of the weight) shall be calculated with a following formula.

$M = M_1 \times N_1 / 100 + M_2 \times N_2 / 100$ [0012]Since easy peel nature is not shown here when the loadings

of olefin system resin or the above-mentioned ingredient (A) of olefine-system-resin-composition thing (X), and an ingredient (B) or the content of a vinyl monomer unit is outside the range of this invention (i.e., when not satisfying above-mentioned formula ** and formula **), it is not desirable. The case of a cohesive failure layer where olefin system resin or the olefine-system-resin-composition thing with which it is satisfied of following formula ** is included is preferred, and its case where olefin system resin or the olefine-system-resin-composition thing containing 40 to 100 % of the weight of ingredients (A) and 0 to 60 % of the weight of ingredients (B) is included is preferred. That is, the value of L has [0 to 60 % of the weight] a preferred value of K 40 to 100% of the weight.

38 $\leq 0.2 \times K + 0.8 \times M \leq 52$ Formula ** [0013] As an ethylene system copolymer of the above-mentioned ingredient (A), For example, an ethylene-unsaturated carboxylic acid copolymer, an ethylene-unsaturated-carboxylic-acid-ester copolymer, An ethylene-unsaturated carboxylic acid anhydride copolymer, an ethylene-vinylacetate copolymer, ethylene-unsaturation carboxylate vinyl acetate copolymer of 3 yuan, the plural copolymers that consist of an ethylene unit and two or more kinds of unsaturated-carboxylic-acid-ester units, etc. are mentioned.

[0014] As unsaturated carboxylic acid, acrylic acid, methacrylic acid, etc. are mentioned, for example. As unsaturated carboxylic acid ester, for example Ethyl acrylate, Methyl acrylate, 2-ethylhexyl acrylate, stearylacrylate, glycidyl acrylate, methyl methacrylate, ethyl methacrylate, 2-ethylhexyl methacrylate, stearyl methacrylate, glycidyl methacrylate, etc. are mentioned. As an unsaturated carboxylic acid anhydride, a maleic anhydride etc. are mentioned, for example. As an example in which an ingredient (A) is preferred, an ethylene-acrylic acid copolymer, An ethylene-methacrylic acid copolymer, an ethylene-methyl acrylate copolymer, An ethylene-ethyl acrylate copolymer, an ethylene-methyl methacrylate copolymer, An ethylene-ethyl methacrylate copolymer, an ethylene-vinylacetate copolymer, An ethylene-methyl acrylate glycidyl methacrylate copolymer, an ethylene-methyl methacrylate glycidyl methacrylate copolymer, an ethylene-acetic acid vinyl-glycidyl methacrylate copolymer, an ethylene maleic anhydride copolymer, etc. are mentioned.

[0015] As for the content M of the above-mentioned vinyl monomer unit, 25 to 50 % of the weight is preferred. An ethylene-methyl methacrylate copolymer, an ethylene-vinylacetate copolymer, or its mixture is preferred also in the example of the above-mentioned ingredient (A). The ethylene-methyl methacrylate copolymer whose above-mentioned ingredient (A) is 25 to 50 % of the weight of content of a methyl methacrylate unit, the ethylene-vinylacetate copolymer which is 25 to 50 % of the weight of content of a vinyl acetate unit, or its mixture is more preferred. It is not limited for the bond form of the above-mentioned vinyl monomer unit and ethylene unit in the above-mentioned ethylene system copolymer, for example, randomness, a block, and alternation at all.

[0016]As an example of an ingredient (B) of using by this invention, Polyethylene, such as low density polyethylene and high density polyethylene; An ethylene-butene-1 copolymer, Ethylene-alpha olefin copolymers, such as ethylene-hexene-1 copolymer; propylene system polymers and those mixtures, such as polypropylene, a propylene-alpha olefin block copolymer, and a propylene-alpha-olefin random copolymer, are mentioned. Here, as alpha olefin of an ethylene-alpha olefin copolymer, the alpha olefin of the carbon numbers 4-10 of butene-1, the hexene- 1, 4-methylpentene- 1, the heptene- 1, the octene- 1, and decene 1 grade is mentioned, for example. As alpha olefin of a propylene-alpha olefin block copolymer and a propylene-alpha-olefin random copolymer, the alpha olefin of the carbon numbers 2, 4-10, such as ethylene, butene-1, and octene, is mentioned, for example.

[0017]Although especially the mixing method of the above-mentioned ingredient (A) and the ingredient (B) was re-corned to the pellet type after it carried out melt kneading of the thing which there is no restriction and fully mixed each pellet by the dry blend, or it with the extrusion machine, any may be sufficient as it.

[0018]The olefin system resin used by this invention or olefine-system-resin-composition thing (X) may be made to contain a compatibilizer, lubricant, an antiblocking agent, a spray for preventing static electricity, an antioxidant, a thermostabilizer, an ultraviolet ray absorbent, an antimicrobial agent, an antifogger, etc. if needed.

[0019]The supporters in this invention Ethylene resin or propylene resin. It consists of olefin system resin or the olefine-system-resin-composition thing (Y) which it is and contains the resin used of the above-mentioned ingredient (B), and resin of the same kind at least 60% of the weight, (removing [however,] the ethylene system copolymer) of above-mentioned ingredient (A). That is, when ethylene resin is used of the above-mentioned ingredient (B), in supporters, the same ethylene resin as an ingredient (B) is used at least 60% of the weight. In less than 60 % of the weight, this rate becomes insufficient [the interlaminar bonding strength of a cohesive failure layer and supporters], and is not preferred.

[0020]As a laminated film of this invention to the container which consists of styrene resin, In 60 to 100 % of the weight of polystyrene which is the weight average molecular weight 200,000-400,000, a sealant layer reaches, It consists of styrene resin or the styrene resin composition containing 0 to 40 % of the weight of rubber modified polystyrene which is a diameter of an average gel particle of 0.1-5 micrometers, and 5 to 30 % of the weight of the amounts of gels, The ethylene-methyl methacrylate copolymer whose ingredient (A) of a cohesive failure layer is 25 to 50 % of the weight of content of a methyl methacrylate unit, It consists of an ethylene-vinylacetate copolymer which is 25 to 50 % of the weight of content of a vinyl acetate unit, or 40 to 100 % of the weight of its mixture, The laminated film in which the ingredient (B) of a cohesive failure layer consists of polyethylene, an ethylene-alpha olefin copolymer, or 60 to 0 % of the weight of its mixture, and supporters consist of polyethylene, an

ethylene-alpha olefin copolymer, or its mixture is preferred.

[0021]There is no restriction especially as a method of obtaining the laminated film of this invention, for example, the conventional co-extrusion processing methods, such as **** inflation processing and **** T-die processing, can be used. However, co-extrusion processing of the laminated film of this invention is carried out so that at least one surface may comprise a sealant layer, a cohesive failure layer which adjoins this sealant layer, and supporters who adjoin this cohesive failure layer further.

[0022]Although the thickness of the laminated film of this invention does not have restriction in particular, 20-100 micrometers is preferred.

[0023]Although the laminated film of this invention does not have restriction in particular about other layers other than the above-mentioned sealant layer, a cohesive failure layer, and supporters, in addition to this, the interlaminar bonding strength of a layer needs to be more than the interlaminar bonding strength of a sealant layer, a cohesive failure layer and a cohesive failure layer, and supporters with the above-mentioned supporters.

[0024]The cover material of this invention consists of the above-mentioned laminated film. As a method of obtaining the cover material of this invention, it is considered as the substrate which comprises a plastic, aluminum foil, or paper, for example, and the layered product which laminated the laminated film of this invention, and the method of next processing this layered product into predetermined shape is mentioned. Here, it is necessary to laminate the layer and substrate of an opposite hand of a sealant layer. It is more desirable to perform surface treatments, such as corona discharge treatment, to the surface which the laminated film of this invention and a substrate laminate, and to double and laminate these treated surfaces, when carrying out lamination. When the container (adherend) corresponding to the sealant material explained above is made to heat seal the sealant layer side, Between a sealant layer and adherend, full weld is carried out, exfoliation arises with moderate power in either between the layers of a sealant layer, between the layers of a cohesive failure layer, the inside of a cohesive failure layer and a cohesive failure layer, and supporters, and a container can be opened easily.

[0025]The cover material of this invention is used by carrying out thermal melting arrival of said cover material to a package body part, after filling up a package body part with contents, for example.

[0026]The container of this invention consists of the above-mentioned laminated film. When sealant layers are made to heat seal, full weld is carried out, exfoliation arises with moderate power in either between the layers of a sealant layer, between the layers of a cohesive failure layer, the inside of a cohesive failure layer and a cohesive failure layer, and supporters, and sealant layers can open a bag easily. As for the container of this invention, the thing of the inner surface of the thing which laminated the laminated film of this invention on paper etc.,

and assembled it to vessel shape, for example, or the thing used as vessel shape which laminated the laminated film of this invention in part at least is mentioned. When the seal of the part which consists of a kind of resin chosen from styrene resin, ethylene resin, and propylene resin as a cover material in these cases, and consists of a laminated film of this invention which constitutes this cover material and a container is carried out, easy peel nature is shown. [0027]

[Effect of the Invention]As mentioned above, as explained in full detail, according to this invention, the laminated film which has easy peel nature and easy open nature, is excellent in the fine sight of an exfoliation interface, and is excellent also in transparency can be provided. This invention can provide the cover material which consists of a laminated film which has the above-mentioned outstanding physical properties. This invention can provide the container which consists of a laminated film which has the above-mentioned outstanding physical properties. [0028]

[Example]Hereafter, although this invention is explained based on an example, this invention is not limited to these examples at all. About items other than the item indicated to the above among evaluation criteria, it carried out as follows.

[0029](1) Dry laminate of the substrate of an easy peel nature polyester monolayer film (the Toyobo Co., Ltd. make, trade names "Toyobo ester E5100", 12 micrometers in thickness, and 500 mm in width) and the corona treatment side of the obtained film was carried out. The desk test coating machine by Yasui Seiki Co. is used for dry laminate, an aromatic ester system anchor coat agent (base resin, the Takeda Chemical, Ltd. make, and a trade name "bamboo rack A310".) A hardening agent, the Takeda Chemical, Ltd. make, trade names "Takenate A3", and the thing that blended ethyl acetate 12% of the weight further at a rate of 32 % of the weight of 1 % of the weight of pair pairs, respectively, and was fully mixed are applied to a substrate so that it may become coverage 2 g/m^2 , After making it stuck by pressure with a film on condition of the temperature of 40°C , and pressure 3 kg/cm^2 , heating aging was carried out in a 40°C oven for 48 hours, and the laminated film was obtained. Adherend was stuck the sealant layer side of the obtained laminated film, and it heat sealed for pressure 3 kg/cm^2 , and time 1 second on condition of 10 mm in width, and the temperature shown in Table 1. As adherend, what used rubber modified polystyrene (the "SUMIBU light E580" by Sumitomo Chemical Co., Ltd.) as the 0.6-mm-thick sheet with the product [made from Tanabe Plastic Machinery] V65-1000 sheet extrusion machine was used. The sample heat sealed was started to 15-mm width, Product [made from an Oriental energy machine] Auto Strain type tension tester was used, and the peel strength at the time of making it exfoliate 180 degrees at the tension speed for 300-mm/was measured. When this peel strength is less than 300g/15mm

width, it is inferior to practical sealing performance, and when exceeding 1500g/15mm width, it is inferior to easy peel nature. The stability of peel strength was judged in quest of the difference of the maximum in each heat-sealing temperature, and the minimum. It can be said that peel strength is stable, so that this value is small.

[0030](2) When it was made to exfoliate in the state above-mentioned evaluation of the heat-sealing edge film remainder and the surface of separation, it was viewed whether the film cut with heat-sealing edge, or the film remainder did not arise. The state of the surface of separation was observed, what is excellent in aesthetic sense was made into O, and what inferior was made into x.

(3) The haze value of the film was measured based on transparency JIS K7105 of a film.

[0031]As resin which constitutes example 1 sealant layer, the pellet of the polystyrene (weight average molecular weight 210,000) obtained by continuation bulk polymerization was used. In olefine-system-resin-composition thing (X) to constitute, a cohesive failure layer as an ingredient (A), the ethylene-methyl methacrylate copolymer resin (the Sumitomo Chemical Co., Ltd. make.) Trade name Acryft WM403, content of a methyl methacrylate unit : 38% of the weight of pellets [60 % of the weight of] as an ingredient (B), What blended 40 % of the weight of pellets of the low density polyethylene (melt flow rate: 2.0g/10 minutes, density:0.923g/[cm]³) obtained by the high voltage ionic polymerization method, and was fully mixed was used. In the olefine-system-resin-composition thing (Y) which constitutes supporters, 100 % of the weight of pellets of the low density polyethylene (melt flow rate: 2.0g/10 minutes, density:0.923 g/cm³) obtained by the same high voltage ionic polymerization method as the above-mentioned ingredient (B) were used. The above-mentioned material is used and it is a cast film film production device by a modern machinery company (three sorts of three layers aggressiveness T die (width: 600 mm)). Polystyrene with the extrusion machine A using Extrusion machine A:40mmphi, extrusion machine B:50mmphi, and C:40 mm of extrusion machines phi on with the resin temperature of 240 **, and an extrusion outlet of 7kg/hour conditions. The above-mentioned olefine-system-resin-composition thing (X) with the extrusion machine B on with the resin temperature of 210 **, and an extrusion outlet of 5kg/hour conditions. An olefine-system-resin-composition thing (Y) with the extrusion machine C The resin temperature of 230 **, It extrudes so that it may laminate on conditions with an extrusion outlet of 23kg/hour in order of extrusion machine A / extrusion machine B / extrusion machine C, By 26-m/in taking over speed, a three-layer laminated film was processed on conditions with a cooling roller temperature of 20 **, and also corona discharge treatment of the layer side which consists of an olefine-system-resin-composition thing (Y) of a film was carried out so that it might get wet and might become tension 45 dyne/cm. As for the thickness of the sealant layer of the obtained film, the thickness of 5 micrometers and the whole of the thickness of 7 micrometers and a cohesive failure layer was 35 micrometers. A result is shown

in Table 1.

[0032]In olefine-system-resin-composition thing (X) to constitute, example 2 cohesive failure layer as a (A) ingredient, the ethylene-methyl methacrylate copolymer resin (the Sumitomo Chemical Co., Ltd. make.) Trade name Acryft WM403, content of a methyl methacrylate unit : 38% of the weight of pellets [80 % of the weight of] as an ingredient (B), It carried out like Example 1 except having used what blended 20 % of the weight of pellets of the low density polyethylene (melt flow rate: 2.0g/10 minutes, density:0.923g/cm³) obtained by the high voltage ionic polymerization method, and was fully mixed. As for the thickness of the sealant layer of the obtained film, the thickness of 5 micrometers and the whole of the thickness of 7 micrometers and a cohesive failure layer was 35 micrometers. A result is shown in Table 1.

[0033]In olefine-system-resin-composition thing (X) to constitute, example 3 cohesive failure layer as a (A) ingredient, It carried out like Example 1 except having used 100 % of the weight of pellets of the ethylene-methyl methacrylate copolymer resin (the Sumitomo Chemical [Co., Ltd.] make, trade-name Acryft WM403, content of a methyl methacrylate unit: 38 % of the weight). As for the thickness of the sealant layer of the obtained film, the thickness of 5 micrometers and the whole of the thickness of 7 micrometers and a cohesive failure layer was 35 micrometers. A result is shown in Table 1.

[0034]The extrusion outlet of comparative example 1 extrusion-machine A / extrusion machine B / extrusion machine C was performed like Example 1 except having considered it as an hour in 7kg/[an hour and], 22kg/[an hour and], and 22kg /, respectively. As for the thickness of the sealant layer of the obtained film, the thickness of 20 micrometers and the whole of the thickness of 7 micrometers and a cohesive failure layer was 48 micrometers. A result is shown in Table 1.

[0035]The extrusion outlet of comparative example 2 extrusion-machine A / extrusion machine B / extrusion machine C was performed like Example 2 except having considered it as an hour in 7kg/[an hour and], 22kg/[an hour and], and 22kg /, respectively. As for the thickness of the sealant layer of the obtained film, the thickness of 20 micrometers and the whole of the thickness of 7 micrometers and a cohesive failure layer was 48 micrometers. A result is shown in Table 1.

[0036]As resin which constitutes comparative example 3 sealant layer, the pellet of the polystyrene (weight average molecular weight 290,000) obtained by continuation bulk polymerization was used. Rubber modified polystyrene obtained by continuation bulk polymerization as a cohesive failure layer and supporters (content of soft-component particles: 20.8% of the weight) melt flow rate: -- 3.2g/58 % of the weight of pellets for 10 minutes, and the ethylene-methyl methacrylate copolymer resin (the Sumitomo Chemical Co., Ltd. make.) Trade name Acryft WM403, content of a methyl methacrylate unit : 38 % of the weight, SP value: Ethylene-hexene-1 copolymer obtained by 23 % of the weight of pellets of 8.50, and a

high voltage ionic polymerization method (melt flow rate: 0.8g / ten parts) density: -- 15 % of the weight of pellets of 0.925 g/cm³, and a styrene isoprene block copolymer rubber hydrogenation thing (Kuraray Make.) The pellet of SEPUTON 2104 was fully mixed at 4% of the weight of a rate, and what corned this at the temperature of 210 ** using the product 40-mmphi single screw extruder, and was made into the pellet (styrene resin composition) was used. [made from Tanabe Plastic Machinery] The above-mentioned material is used and it is a cast film film production device by a modern machinery company (three sorts of three layers aggressiveness T die (width: 600 mm)). Extrusion machine A:40mmphi, extrusion machine B:50mmphi, and C:40 mm of extrusion machines phi are used, The above-mentioned styrene resin composition with the extrusion machines B and C The resin temperature of 240 **, Extrude on the extrusion outlet of 10kg/hour, and 8kg/hour conditions, and polystyrene with the extrusion machine A The resin temperature of 240 **, It extruded on conditions with an extrusion outlet of 4kg/hour, and the two-layer laminated film was processed on conditions with a cooling roller temperature of 40 ** by 12.4-m/in taking over speed, and also corona discharge treatment of the layer side which consists of a styrene resin composition of a film was carried out so that it might get wet and might become tension 45 dyne/cm. The thickness of 8 micrometers and the whole of the thickness of the sealant layer of the obtained film was 44 micrometers. A result is shown in Table 1.

[0037]

[Table 1]

----- Fruit ** Example Ratio ** Example 1 2 3 1 2 3 -----														
---- Thickness of a sealant layer mum7 7 7 77. Thickness of eight cohesive failure layers mum5														
5 5 20. 20 36 easy peel nature Peel strength kg/15mm width . heat-sealing temperature 150 **														
kg/15mm width . 0.80 0.95 0.82 1.62. 2.06 0.57 160 ** kg/15mm width . 0.78 0.92 0.82 2.11.														
2.50 0.60 170 ** kg/15mm width . 1.02 0.93 0.85 1.94. 2.70 0.63 180 ** kg/15mm width . 1.12														
0.98 0.86 2.03. 1.24 0.67 190 ** kg/15mm width . 1.06 0.94 0.80 1.98. 1.14 Difference of the														
0.81 maximum and the minimum 0.34. 0.06 0.06 0.49 1.56 The 0.24 seal-edge film remainder														
-less -- -less -- -less -- an owner -- an owner -- -less -- State of the surface of separation OO O														
x x O -- film transparency Hayes % 3.0 2.8 1.9 6.1 6.3 50.0 -----														

[Translation done.]